**SBI3U QUIZ – Mendel’s First Law Name:**

The round peapod allele (R) is dominant, while the wrinkled peapod allele (r) is recessive. A heterozygous round peapod plant is crossed with a wrinkled peapod plant. Use a punnett square to solve the following:

1. Determine the predicted genotype ratio of the offspring.
2. Determine the predicted phenotype ratio of the offspring.
3. If this cross produced 50 plants, how many plants would you predict would be wrinkled peapods?

**SHOW ALL OF YOUR WORK!!!**

Variables: (1 mark) Let R represent the round peapod

Let r represent the wrinkled peapod

Genotypes: (1 mark) Parents: Rr (round) rr(wrinkled)

Gametes: (1 mark) R , r r , r

Punnett square: (1 mark)

F1:

|  |  |  |
| --- | --- | --- |
|  | **R** | **r** |
| **r** | Rr | rr |
| **r** | Rr | rr |

1. (1 mark)

The genotype ratio of the offspring is 1:1 (Rr:rr)

1. (1 mark)

The phenotype ratio of the offspring is 1:1 (round:wrinkled)

1. (1 mark)

50% would be wrinkled, therefore 25 plants.

**TOTAL: 7 marks**